

(19) World Intellectual Property Organization
International Bureau



PCT

(43) International Publication Date
13 October 2005 (13.10.2005)

(10) International Publication Number
WO 2005/094450 A3

(51) International Patent Classification⁷: **F03B 13/10,**
13/12

(21) International Application Number:
PCT/US2005/009338

(22) International Filing Date: 21 March 2005 (21.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/556,713 26 March 2004 (26.03.2004) US

(71) Applicant (for all designated States except US): **WAVE-
BERG DEVELOPMENT [CA/CA];** 500-5162 Duke
Street, Halifax, NS B3J 1N7 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WEGENER, Paul**
T. [US/US]; 73 W. 47th Street, Unit 3, New York, NY
10038 (US). **BERG, John** [US/US]; 415 Ward Drive, Oak
Hill, FL 32759 (US).

(74) Agents: **RUTAN & TUCKER** et al.; 611 Anton Blvd.,
14th Floor, Costa Mesa, CA 92626-1931 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AI, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SI, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

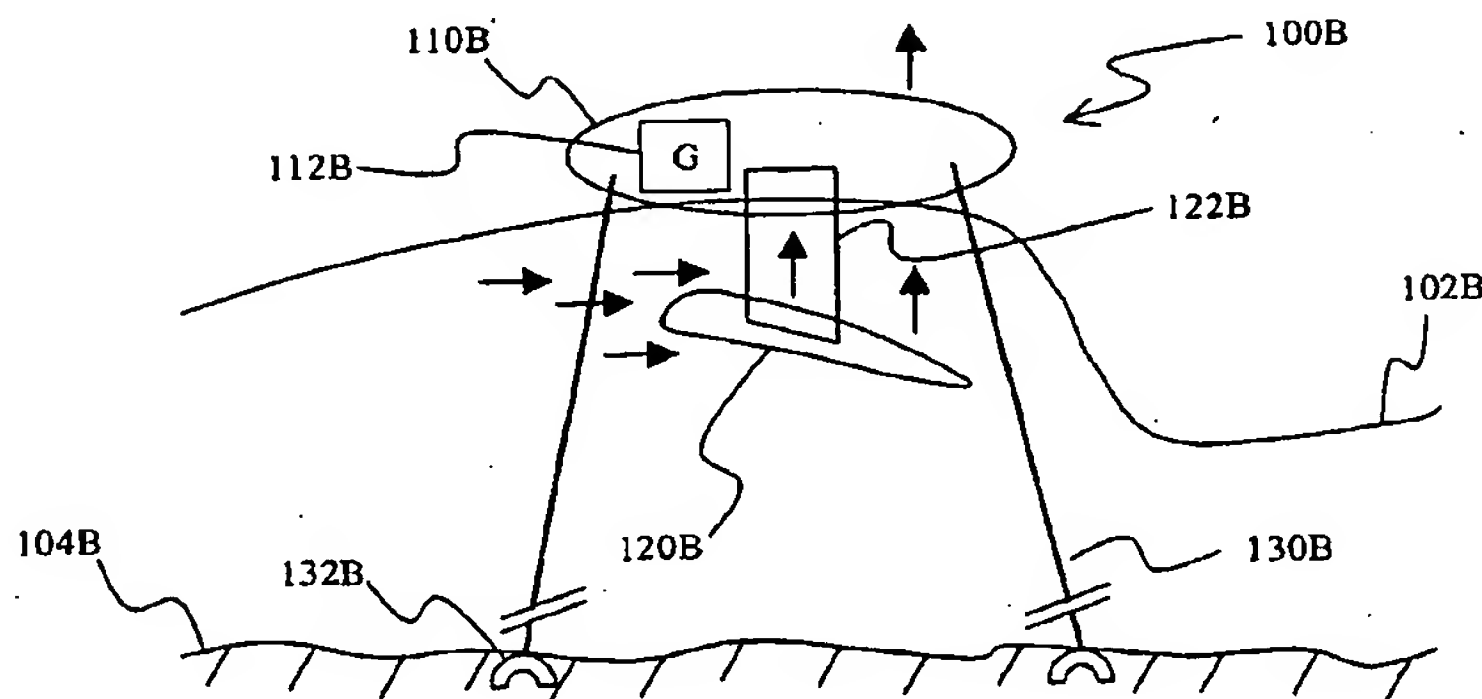
Published:

— with international search report
— with amended claims

(88) Date of publication of the international search report:
17 November 2005

[Continued on next page]

(54) Title: CONFIGURATIONS AND METHODS FOR WAVE ENERGY EXTRACTION



(57) Abstract: A wave energy harvester (100A) includes an element (120A) that converts forward and/or backward of water in a wave (102A. B. C) passing the harvester (100A) into upward and/or downward movement to thereby increase the vertical amplitude of the harvester (100A) relative to the sea floor (104A. B. C). In most preferred aspects, the element (120A) is a hydrofoil that is coupled to the harvester (100A). Further preferred aspects include those in which part of, or the entire harvester (100A) has a neutral buoyancy, and where energy is extracted from the downwards movement of the neutrally buoyant part (100A) after a wave has lifted that part (110A).



Date of publication of the amended claims: 5 January 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094450 A3

(51) International Patent Classification⁷: **F03B 13/10,**
13/12

(74) Agents: **RUTAN & TUCKER** et al.; 611 Anton Blvd.,
14th Floor, Costa Mesa, CA 92626-1931 (US).

(21) International Application Number:
PC1/US2005/009338

(22) International Filing Date: 21 March 2005 (21.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/556,713 26 March 2004 (26.03.2004) US

(71) Applicant (for all designated States except US): **WAVE-
BERG DEVELOPMENT** [CA/CA]; 500-5162 Duke
Street, Halifax, NS B3J 1N7 (CA).

(72) Inventors; and

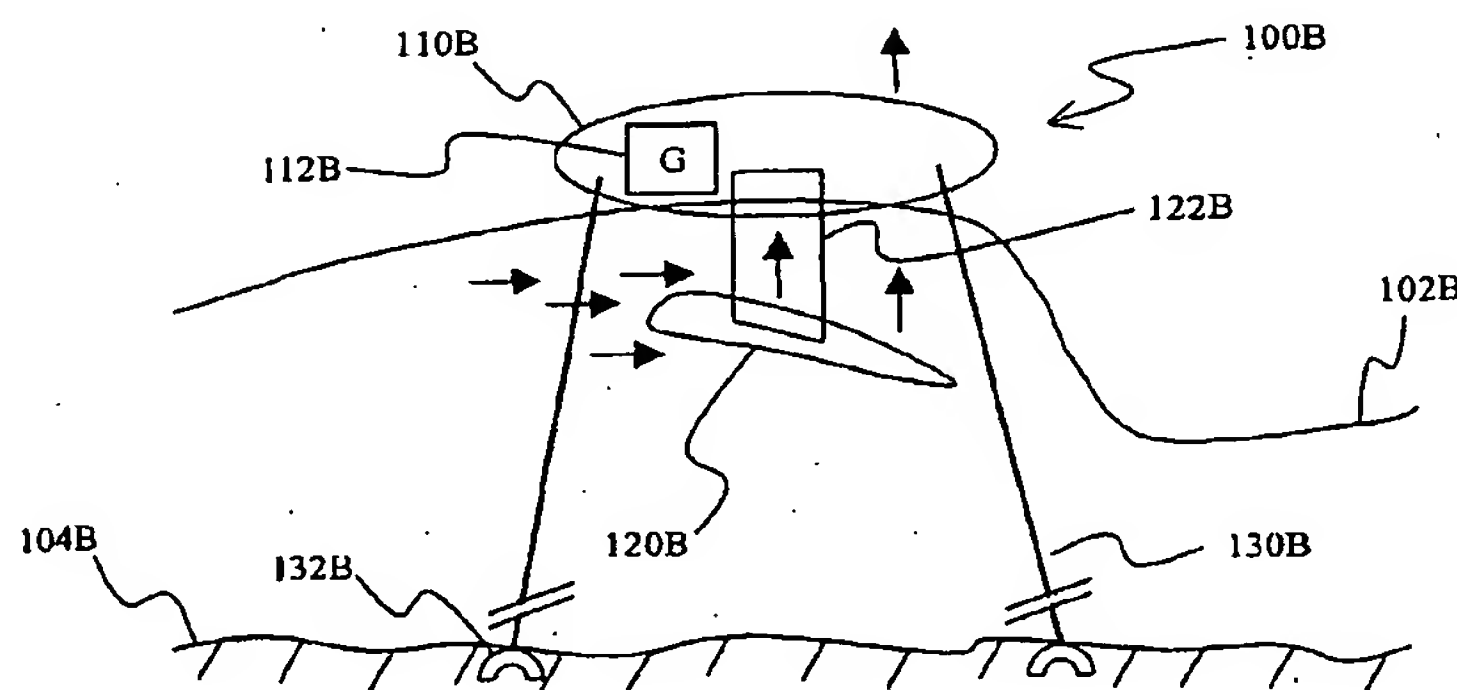
(75) Inventors/Applicants (for US only): **WEGENER, Paul**
T. [US/US]; 73 W. 47th Street, Unit 3, New York, NY
10038 (US). **BERG, John** [US/US]; 415 Ward Drive, Oak
Hill, FL 32759 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: CONFIGURATIONS AND METHODS FOR WAVE ENERGY EXTRACTION



(57) Abstract: A wave energy harvester (100A) includes an element (120A) that converts forward and/or backward of water in a wave (102A. B. C) passing the harvester (100A) into upward and/or downward movement to thereby increase the vertical amplitude of the harvester (100A) relative to the sea floor (104A. B. C). In most preferred aspects, the element (120A) is a hydrofoil that is coupled to the harvester (100A). Further preferred aspects include those in which part of, or the entire harvester (100A) has a neutral buoyancy, and where energy is extracted from the downwards movement of the neutrally buoyant part (100A) after a wave has lifted that part (110A).



Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
17 November 2005